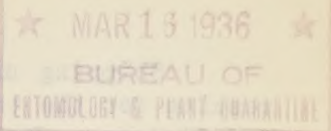


## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.



March 1936

United States Department of Agriculture  
Bureau of Entomology and Plant Quarantine

## A THERMALLY INSULATED UNIT FOR THE TRANSPORTATION OF ADULT INSECT PARASITES

By W. G. Bradley, Division of Cereal and Forage Insect Investigations

Biological control programs usually necessitate the transportation of adult parasites from the locality of their emergence to the point of their release. One of the factors on which low mortality during such transportation depends is the maintenance of temperatures sufficiently low to prevent excessive activity of the parasites within the shipping containers en route. Members of the European corn borer research staff, engaged in parasite investigations, have developed an inexpensive type of shipping box which satisfies this temperature specification for movement of material by rail within a 24-hour radius of the shipping point. Within this time limit, therefore, advantage may be taken of the lower rates and more extended service offered by railway express as compared with air express.

The general construction of the shipping box is illustrated in figure 1. It is made of any durable wood in which boards of sufficient width may be obtained. The top, bottom, ends, and sides are of single-width, 1-inch boards. The sides overlap, and are nailed to, the ends and bottom. The cover is hinged, and, when closed, is clamped shut by the use of window fasteners in the front and on the ends. Chest handles on the ends of the box facilitate lifting and handling.

The insulating feature is provided by a double layer of  $\frac{5}{8}$ -inch celotex covering the inside of the box. All corners at the bottom and sides are counterlapped, and the insulating material on the under side of the top is cut to fit snugly against the sides and ends of the box and against the edges of the wall insulation when the cover is closed.

The box may be constructed in a size suitable to the requirements of the shipper. For transportation of parasites of the European corn borer, a box measuring  $14\frac{1}{2}$  by 16 by 13 inches, outside dimensions, is used when small lots are involved, and one measuring  $20\frac{1}{2}$  by  $17\frac{1}{2}$  by 29 inches, outside dimensions, is used when larger numbers are to be shipped. The latter size is about as large as can be handled conveniently by one man.

The cooling unit is simple and consists of two or more  $\frac{1}{2}$ -gallon paint cans filled with ice at the shipping point. These cans may be refilled easily at the receiving station before transportation to the field begins. They have an advantage over a nonmovable ice container, rigidly constructed in the box, as they may be shifted to any desired position to accommodate the packing of odd-shaped lots of parasite containers.





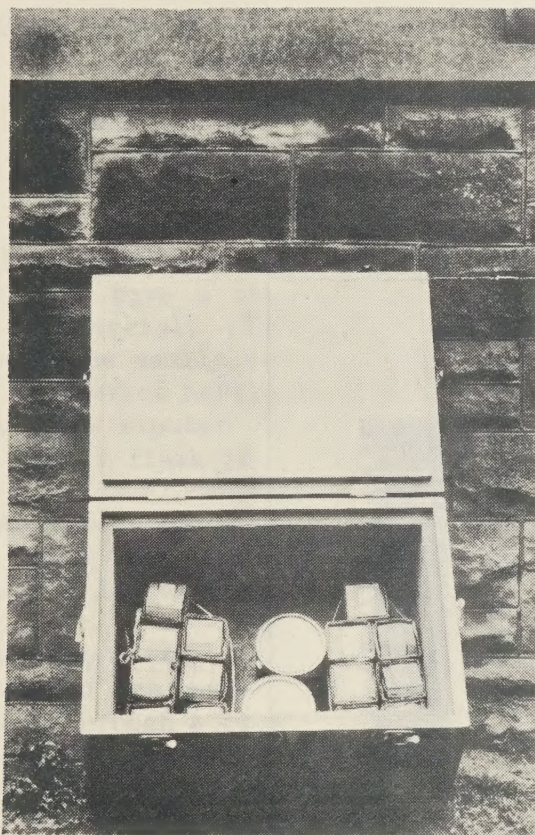


Figure 1.--Shipping box with cover raised to show icing cans and parasite containers.

